THE SURVEY OF INCOME AND PROGRAM PARTICIPATION

LIFE EVENTS AND SAMPLE ATTRITION IN THE SURVEY OF INCOME AND PROGRAM PARTICIPATION

No. 255

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DRAFT July 28, 1986

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Introduction

The Survey of Income and Program Participation (SIPP) is a longitudinal survey which began in October 1983. The survey is intended to measure extremely complex phenomena: detailed income sources, recipiency of Federal and state aid, weekly labor force status, health status and health insurance coverage, taxes, assets, and interest income. In addition to these types of information, the survey collects information on demographic characteristics of all household members. During each visit, interviewers ask questions from a core questionnaire and also, on most visits, ask variable sets of additional questions in the form of "topical modules" on particular issues, such as child care or educational financing.

Approximately 20,000 households formed the "1984 panel." Persons living at the selected addresses were initially interviewed (in four equal-size groups) between October 1983 and January 1984. The s ample of addresses was selected to be nationally representative of the civilian noninstitutional population of the United States. Persons whose usual residence was at one of the selected addresses were then scheduled for interview once every four months throughout the 2 2/3 years of the 1984 sample's life, that is, into the summer of 1986. In February 1985 and in February 1986, new smaller samples were introduced and a new sample will be introduced each year in the future. More details on both the structure and content of SIPP are available in SIPP Working Paper No. 8401 Update, "An Overview of the SIPP" by Nelson, McMillen, and Kasprzyk.

While other major surveys such as the Current Population Survey and the National Crime Survey, both conducted by the Census Bureau, return to the same address for each subsequent visit regardless of whether the occupants of the address change, the SIPP interviewer returns to interview the same persons who form the sample. Persons who move in with SIPP sample persons after the first interview, while they live with sample persons, are also included in the sample and interviewed. If persons move to a new address, they are followed and interviews are obtained at the new address (for more information about mover's procedures, see Jean and McArthur, 1984.)

Throughout the sample period efforts are made to continue to interview all persons who are ever part of the sample--even if they move to other parts of the country--with a few exceptions: persons who moved into households with sample persons after the first interview are not followed unless they moved with those sample persons; persons who are institutionalized, move outside of the United States, or move to an Armed Forces barracks are not followed; and children under 15 who move and are not accompanied by a sample person who is 15 years old or over are not followed.

Purpose of this Study

Sample maintenance is an important issue in any survey operation. It is especially important when that survey is longitudinal; the Survey of Income and Program Participation (SIPP) follows its sample population through 2-2/3 years. This paper represents a continuation of the work presented during the 1985 annual meetings of the American Statistical Association (see McArthur and Short, 1985).

The goal of this work is to determine whether attrition from the survey is basically a random phenomenon or whether it is systematic. If attrition is indeed related to personal characteristics, it may be possible to use these results to improve field procedures or adjust weighting specifications. Insofar as improvements are not possible, quantification of individuals leaving the sample is necessary for analysis of succeeding panels of data. If, indeed, attrition is systematic then account should be taken of the degree to which this occurs in statistical analyses of these data. This is so whether the analysis is a simple description of characteristics in a cross-section of the data set involving a subsequent interview or if the analysis is a dynamic one involving several successive interviews at once. Just as individuals with particular characteristics may leave the sample with greater frequency, so individuals experiencing particular events may be more likely to leave the sample. For example, an individual who loses a job may be temporarily absent or may move out of the area, and thus, not be located by an interviewer for a subsequent wave or waves. If this occurs, any estimation of the probabilities of an event's occurrence over time will be biased to some extent by nonrandom attrition. For a theoretical discussion of this issue see Cox (1959), Gail (1975), Fisher and Kanarek (1974) and Williams and Lagakos (1977).

Thus, this paper describes our findings in several areas: interviewing patterns, reasons recorded for noninterview, and characteristics of sample members by their interviewing status, and finally some initial work studying the relationship between the occurrence of events, such as a change in marital status or employment status, and interviewing status.

Source of Data and Methodology

We define sample attrition as reduction in the numbers of initially interviewed sample persons over the time that those persons are eligible for interview. In a longitudinal survey, Disproportionate attrition over time may cause the sample to no longer represent the population from which it was drawn. If, however, the attrition is minimal and no particular subgroups of persons leave the sample, then attrition may not be a cause for worry. We have been exploring the attrition from the SIPP and its potential effect upon the distribution of characteristics of persons remaining in the sample population. The data are the interviewing results from the first five waves of interviewing which covered a twenty-month period from October 1983 through April 1985. The data contained on the extract file that we have used come exclusively from the core portion of the questionnaires—containing information collected during each wave--none of the topical module information is included.

For this work we have included only those sample persons who were 15 years old and over, who were members of a household that lived at one of the selected addresses, and for whom a personal interview was obtained during the first visit by an interviewer. Also we have excluded approximately 16 percent of the original sample who were cut from the sample during a sample reduction conducted as a cost-cutting measure. Further, the sample for this study excludes approximately one quarter of the total SIPP sample for whom the second interview was not scheduled. Because they were not scheduled

for all five interviews, they are not included in our current study sample. Persons who became part of the sample after the initial interview, by moving in with initially interviewed persons are also not included in this analysis. The resulting restricted sample consists of 25,138 persons.

Patterns of Attrition

The first two tables summarize the interviewing patterns through the fifth wave of interviewing. The symbol "X" represents a successful interview for the wave and the symbol "0" is used when no interview was obtained.

In table one, each horizontal line represents a unique pattern of interview. Reading down the lines reveals all 16 possible interviewing patterns. The first line is persons who were only interviewed once, during the first wave, about 4 percent of the total. The last line is all persons, 79 percent of the total, who were interviewed during all five waves. The last 8 lines contain all persons (83 percent) who were interviewed during the first and the fifth wave and who may have missed one or more of the intervening interviews. The top half of the table shows apparent attrition by the fifth wave, that is, no fifth wave interview, and includes approximately 17 percent of the original sample.

Table 2 presents another way of looking at the interviewing patterns. Grouped into five categories: response every interview; attrition cases (those persons who were interviewed one or more times and then discontinued); and then three different combinations of cases with some intervening missing data, important patterns in the consideration of longitudinal imputations and weighting.

Reasons for Noninterview

Individuals may not have been interviewed for many reasons. An entire household may not have been interviewed, or if the household was interviewed, some individual household members may not have been interviewed. The SIPP is designed to keep a detailed record of the outcome of each interview attempt; detailed codes that represent the outcome of each interview attempt are part of the

records kept for each individual and for each household. We reconstructed the reasons for leaving

using three variables contained on each person's record, the household interview status, the person

interview status, and the reason entered or left code.

Among the reasons recorded for a household noninterview are: no one was home in repeated

visits, all household members were away the entire period, the household members refused to be

interviewed, the interviewer was unable to locate the unit, roads were impassable, a serious illness or

death had occurred in the household, all sample persons in the household were deceased, had moved

out of the country, or were living in armed forces barracks, or all sample persons had moved and

were living at an unknown address or were living more than 100 miles from a SIPP sampling unit

with no available telephone number.

Even if a household interview is obtained, individual household members may have refused to

be interviewed or may not have been available during the entire interviewing period and no other

household member may have been willing or able to supply information about that individual.

Table 3 displays the reasons for leaving grouped into five categories for the two groups that

were noninterviewed five times: the "leavers," that is,, those who are missing at least the fifth interview;

and the "returners," who   have a fifth interview but are missing one or more intervening interviews.

The principal reason for noninterview in SIPP for both groups was a household refusal.

Approximately 13 percent of the leavers actually had "left the SIPP universe," that is, they died, were

institutionalized, moved overseas, or moved onto an armed forces barracks and thus they are not true

attrition cases. It is useful to point out here that from one wave to the next the reason for a noninterview

may change. For example, persons who were not home in one interview may in the next interview have

become "refusals." In this paper persons were grouped on the basis of the reason they were not

interviewed at the time of the first noninterview.

Table 6 crosstabulates the major interview patterns for persons missing one or more interviews by

the recorded reasons for noninterview. Household refusals dropped off significantly after the first

interview, whereas persons whom the interviewers recorded as being "unable to contact" seemed to be

increasing slightly.

<u>Relationship between Characteristics and Attrition</u>

In order to determine the effect of attrition from the sample we looked at characteristics of persons by their interviewing experience. Tables 4 and 5 contain these data. Table 4 updates data originally presented through the third wave contained in the paper presented at last year's Statistical Meetings (see McArthur and Short, 1985). We have broken the restricted sample described previously into three subgroups: the "stayers" (those persons who were interviewed during all 5 interviewing waves), the "leavers," and the "returners." Persons who left our universe, that is those who were institutionalized, who died, who moved overseas, etc., are not included in the distributions of leavers or returners. The values of the characteristics shown are as of the first wave. For this analysis we employed chi-square statistics which incorporated a sample design effect. These statistics were calculated to test the independence of the selected characteristics and sample attrition. The calculated chi-square relevant to a particular characteristic (between columns 2 and 3) is shown in the table below each characteristic. Those variables determined to have significantly different distributions at the 5 percent level are noted with an asterisk on the table.

Among the characteristics for which distributions are shown in the table, we find that regional office residential characteristics, whether the home was owned or being rented, the sample person's age, race, relationship to reference person, marital status, education, employment status, household monthly income, and asset ownership appear to be related to attrition. Also significant was whether the initial interview was conducted by self or proxy. It is also interesting to note which variables were not significantly different between "leavers" and "stayers; " these are number of persons in the household, sex, ethnicity, length of interview, hours worked per week and recipiency status (that is, whether the household receives food stamps, WIC and/or AFDC benefits). The fifth table shows distributions of characteristics by selected reasons recorded for leaving. Of particular interest here is the apparent

similarity of distributions of characteristics for the household refusals to the "stayers," that is, few of the distributions of characteristics were significantly different. Not surprisingly, distributions of particular characteristics for the persons who moved leaving no followup address and for those who left the universe are quite distinct from the full sample; see for example, the distributions by whether living quarters were owned or being rented, of age of sample persons, of sex, of ethnicity, of marital status, and of person's monthly income.   As with Table 4, the calculated chi-squares are shown in the table and those that were significant at the 5 percent level are starred.

Association of Life Events and Attrition

The remaining tables describe relationships between the occurrence of significant life events and continuing in the sample. We hypothesized that the changes we are interested in could be related to the probability of missing interviews. A number of characteristics which could change during a person's time in sample were examined. These included household size, marital status, recipiency of cash and non-cash benefits, employment status, residence, and household income. For each of these characteristics, with the exception of residence, we compared status as reported during each successive interview to status as reported in the first interview, and change was defined in terms of the interview in which the change was recorded. Then we examined attrition that occurred in the very next interview by whether a change had been recorded in the previous interview. Thus, we examined status as recorded in the second interview and attrition before the third interview; changes recorded in the third interview and attrition before the fourth interview; and changes recorded in the fourth interview and attrition before the fifth interview. We used persons who were interviewed in all five waves as the control group to compare rates of change.

Our hypothesis was that those persons who were leaving the sample were more likely to experience a change than those remaining in sample. Measured changes probably underestimate total changes for persons with missing interviews because changes may occur concurrently with leaving the sample, allowing no way of assessing those changes.

Definitions of change used in this analysis and shown in Table 7 and in Table 8 are quite specific

in nature and the reader should be aware of the inability of these measures to adequately measure much important change. Household size change was defined as an increase or a decrease in absolute number of household members from one wave to the next. Employment statuses were grouped into three categories: with a job the entire last month of the reference period, with a job part of that month, or with no job during that month. Change in employment status was defined as changing among those three groupings. Household income was grouped into three levels as of the last month of the reference period: less than $1250 per month, $1250 to $2999 per month, and $3000 or more per month. Change in total household income was defined as a change of at least $500 which caused the household income to change level. Change in marital status was defined in terms of any recorded change from the status, such as never married or divorced, as reported in the first interview. The table also shows change occurring to the subgroup of persons who reported being married, spouse present in the first interview. Change in recipiency status of means-tested cash and noncash benefits, such as Aid to Families with Dependent Children and Food Stamps, is shown in the table. Broken out separately are the proportions who change status from benefit recipiency to nonrecipiency. Table 8 shows the relationship between changing residence and attrition. The figures shown are persons who moved during an interview wave and who also became leavers in that wave. Shown for comparison throughout Tables 7 and 8 are the proportions of the "stayers" who experience those events during each interview wave.

For this analysis we used the student's T statistic and incorporated a sample design effect factor. This statistic was used to determine whether changes in the characteristics tested were significantly related to the possibility of attrition before the next interview. An asterisk is shown beside those proportions that are significantly different from the stayer group at the level 5 percent. Among the characteristics that we examined, change in number of persons in the household, whether an increase or a decrease, appeared to be related to attrition. Also apparently related were employment status change and change in household income. Not surprisingly, a change in residence was also related to attrition. Interestingly there was no strong relationship between a change in noncash or cash benefit recipiency and attrition, or between marital status change and attrition. Note that these results are dependent upon the definitions of change implemented in this study. Other definitions may yield different conclusions.

However, the testing of more refined definitions awaits future study.

Conclusions and Direction of Future Work

This study suggests that some non-random attrition occurs over the first five waves of the 1984 SIPP panel. Persons leaving the sample have significantly different residential characteristics, age, race, relationship to reference person, marital status, education, employment status, and asset ownership patterns from those who "stay." These results imply that population inferences describing these characteristics using waves beyond the first, without some compensating adjustment to the weights assigned to the remaining sample persons, will be biased to some extent.

Our results further suggest that analyses of probabilities of the occurrence of some events are related to attrition as well. Individuals who experience a household change, job change, change in residence, or change in income are more likely to leave the sample than those who do not. We suggest that probabilities of these particular events will be underestimated if analysis is restricted to persons in the sample through all 5 waves.

Admittedly our measures are crude and fail to take account of many changes that occur and go unobserved by us; changes that occur but do not immediately precipitate withdrawal from sample; and important interactions between personal characteristics, characteristics and event occurrences, and occurrences of several events within the same time period. Further study should, most certainly incorporate analyses of such interactions. Meanwhile, all conclusions from analyses of these data should be drawn carefully and made in light of the fact that they are conditional upon an individual experiencing a particular pattern of interview.

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	Patterns:					Number	Percent of Sample
	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5		
1	X	0	0	0	0	1058	4.21
2	X	0	X	0	0	62	0.25
3	X	X	0	0	0	968	3.85
4	X	X	X	0	0	904	3.60
5	X	0	0	X	0	23	0.09
6	X	0	X	X	0	31	0.12
7	X	X	0	X	0	86	0.34
8	X	X	X	X	0	1090	4.34
9	X	0	0	0	X	31	0.12
10	X	0	X	0	X	18	0.07
11	X	X	0	0	X	76	0.30
12	X	X	X	0	X	417	1.66
13	X	0	0	X	X	43	0.17
14	X	0	X	X	X	149	0.59
15	X	X	0	X	X	304	1.21
16	X	X	X	X	X	19878	79.08
Total						25138	100.00

Table 1: Wave 1 Interviewed persons in Interviewed Households 15+ Years in Rotations 1, 2, or 3 Total in Wave 1= 25,138 (Interviewed = X, Not Interviewed = 0)

Table 2. Patterns of Interview for Wave 1
        Interviewed Persons in Rotation 1, 2, or 3

			Number	Percent
1.	**Response every interview (5 interviews)**		19878	79.08
	Pattern:	XXXXX		
2.	**Attrition Cases**		4020	16.00
	Patterns:	XXXX0		
		XXX00		
		XX000		
		X0000		
3.	**First and Fifth Interviews conducted but**		870	3.46
	one intervening interview missing			
	Patterns:	XXX0X		
		X0XXX		
		XX0XX		
4.	**First and Fifth Interviews conducted, two or**		168	0.66
	more intervening interviews missing			
	Patterns:	X000X		
		X0X00		
		XX00X		
		X00XX		
5.	**Fifth interview missing and one or**		202	0.80
	more intervening interviews missing			
	Patterns:	X00X0		
		X0X00		
		X00X0		
		XX0X0		
		Totals:	25138	100.00

Table 3. Reasons for Noninterviews

(includes persons who became "out of universe" in the total)

	Leavers	Returners
Total Persons	4222	1038
Percent Those Initially Interviewed	16.8	4.1
Reason for leaving	100.0	100.0
Refusals, Total	57.8	38.9
Household	51.3	31.0
Person	6.5	7.9
Person Left Universe	13.4	1.0
Deceased	5.8	-
Institutionalized	3.0	0.4
Armed Forces Barracks	1.6	0.3
Overseas	3.0	0.2
Unable to Contact Household	5.0	19.7
No one home	2.0	6.7
Temporarily absent	2.9	12.9
Unable to locate	-	0.1
Moved Address Unknown	13.4	13.2
Other	10.4	27.2

Two control card and one questionnaire item were used to determine "reasons for leaving." The control card items were household interview status (item 36B) and the entered/left code (UENTLFT). The questionnaire item was person interview status (PPINTVW). The household interview status gives reason which apply to the whole household, such as "no one home, "the household refuses to give an interview, or the household moved but no address was available. The entered/left code is recorded along with the date that household member joins or leaves a household; it tends to be person specific: "deceased," "institutionalized," etc. The final item used, the person interview status, refers to whether questionnaire information was obtained for that person. When that item is coded zero it means the person was less than 15 years old or that an interview was not obtained for the household. A code of "1" means the person himself gave the interview and "2" means the information was obtained by proxy. A code of "3" means the person refused to give any information on himself and "4" means no information was obtained for that person for some other reason. The last category shown in the table combines the "other" type categories from all three items.

Table 4: Distributions of Characteristics of Initially Interviewed Persons by SIPP 1984 Panel

			Restricted Sample	Stayers (5 interviews)	Leavers (missing at least the 5th interview)	Returned (have the 5th interview but missed 1+ intervening interviews)
Total Number			25138	19878	3655	1028
WAVE 1 VARIABLES						
REGIONAL OFFICE:						
Boston			7.2	7.4	6.9	3.7
New York			6.9	5.9	10.2	14.1
Philadelphia			10.4	10.8	8.2	11.1
Detroit			8.4	8.5	8.1	7.1
Chicago			7.8	8.4	4.5	6.3
Kansas City			8.4	9.1	5.9	4.4
Seattle			8.6	8.9	7.2	7.4
Charlotte			8.9	9.2	8.2	5.0
Atlanta			11.2	10.6	13.5	14.0
Dallas			9.7	9.1	12.3	13.2
Denver			5.7	5.8	5.7	5.1
Los Angeles			6.8	6.2	9.4	8.7
Chi-square columns 2 and 3:	105.11	11 degrees of freedom (d.f.)*				
RESIDENTIAL CHARACTERISTICS:						
Not an SMSA			25.5	26.8	19.3	21.7
SMSA: LT 100,000			1.3	1.3	1.4	0.6
SMSA: 100-249 thou.			9.4	9.6	8.2	7.7
SMSA: 250-499 thou.			9.2	9.5	8.0	7.5
SMSA: 500-999 thou.			13.4	13.3	13.9	12.5
SMSA: 1-2.9 mill.			24.1	23.3	27.9	26.6
SMSA: 3-14.9 mill.			17.2	16.1	21.5	23.5
Chi-square columns 2 and 3:	52.47	6 d.f.*				
LIVING QUARTERS:						
House, Apt., Flat			94.0	93.9	94.6	94.4
Nontransient Hotel			0.2	0.2	0.2	0.1
Perm. In Trans. Hotel			0.1	0.1	0.1	0.2
HU Rooming House			0.1	0.1	0.1	0.1
Not HU/Room Hse			0.1	0.1	0.2	0.1
Mobile Home, no add.			4.4	4.6	3.8	4.2
Mobile Home, w/ add.			0.9	0.9	1.0	0.5
All other			0.3	0.3	-	0.5
Chi-square columns 2 and 3:	10.9	9 d.f.				
LIVING QUARTERS:						
Owned/being bought			69.7	71.6	63.5	59.6
Rented for cash			28.1	25.9	34.9	39.0
Occ'd w/o cash pmt			2.2	2.4	1.6	1.4
Chi-square columns 2 and 3:	41.47	2 d.f.*				
NUMBER OF PERSONS IN HOUSEHOLD:						
1 person			11.6	11.5	10.7	10.4
2 persons			29.0	28.8	29.0	28.1
3 persons			20.3	20.1	21.9	21.2
4 persons			20.0	20.8	17.8	16.4
5 persons			10.7	10.6	11.1	12.0
6 persons			4.4	4.3	4.8	6.7
7 persons			2.1	1.9	2.8	2.6
8 or more persons			2.0	2.1	1.9	2.7
Chi-square columns 2 and 3:	11.44	7 d.f.				
INTERVIEW STATUS:						
Self			67.0	67.9	63.3	64.5
Proxy			33.0	32.1	36.7	35.5
Chi-square columns 2 and 3:	9.97	1 d.f.*				
INTERVIEW LENGTH:						
Less than 15			27.4	26.8	29.3	30.2
15 to 29			43.8	44.1	43.7	41.6
30 to 44			20.9	21.0	20.1	20.9
45 to 59			6.0	6.1	5.3	6.0
60 or more			2.0	2.0	1.6	1.3
Chi-square columns 2 and 3:	5.25	4 d.f.				
RELATIONSHIP:						
Reference Person			35.2	35.9	33.1	32.2
Primary Individual			13.0	12.7	13.0	12.0
Spouse			28.5	29.7	25.3	26.0
Child			16.8	16.3	19.4	18.2
Other Relative			3.5	3.0	4.8	5.1
Non-rel w/rels.			0.4	0.3	0.8	1.2
Non-rel no rels.			2.5	2.0	3.7	5.4
Chi-square columns 2 and 3:	41.04	6 d.f.*				
AGE:						
15-24			21.9	21.0	25.5	27.0
25-44			37.7	37.9	39.0	40.6
45-64			25.2	26.0	24.6	19.6
65 and over			15.1	15.2	10.8	12.7
Chi-square columns 2 and 3:	24.66	3 d.f.*				
SEX:						
Male			46.9	46.1	49.0	49.2
Female			53.1	53.9	51.0	50.8
Chi-square columns 2 and 3:	3.28	1 d.f.				

			Restricted Sample	Stayers (5 interviews)	Leavers (missing at least the 5th interview)	Returned (have the 5th interview but missed 1+ intervening interviews)
Total Number			25138	19878	3655	1028
RACE:						
White			86.8	87.6	84.2	83.5
Black			10.4	9.8	12.1	14.2
Am. Ind/Esk/AlNative			0.4	0.4	0.8	0.5
Asian/Pac. Isl.			2.4	2.2	2.8	1.8
Chi-square columns 2 and 3:	13.32	3 d.f.*				
ETHNICITY:						
Spanish Origin			5.6	5.3	6.6	7.0
Not Spanish Origin			94.4	94.7	93.4	93.0
Chi-square columns 2 and 3:	2.36	1 d.f.				
MARITAL STATUS:						
Mar'd, spouse present			58.1	59.9	53.1	52.4
Mar'd spouse absent			0.6	0.5	0.8	0.9
Widowed			7.3	7.4	5.6	5.7
Divorced			6.6	6.4	7.3	8.2
Separated			2.3	2.0	3.2	2.9
Never Married			25.0	23.7	30.1	29.9
Chi-square columns 2 and 3:	37.21	5 d.f.*				
HIGHEST GRADE ATTENDED:						
Less than 9 years			11.4	11.4	8.5	10.5
9-11 years			16.8	16.5	18.5	18.9
12 years			35.8	35.9	36.6	35.1
More than 12 years			36.0	36.2	36.4	35.5
Chi-square columns 2 and 3:	10.62	3 d.f.*				
EMPLOYMENT RECORD:						
With Job:						
Worked all weeks			54.6	55.3	54.9	54.9
Missed 1+ weeks			1.2	1.2	1.3	0.9
Time on layoff			0.3	0.2	0.5	0.2
Job Part of Time:						
No layoff/not looking			1.3	1.3	1.1	1.7
Did look or on layoff			1.3	1.2	1.9	2.4
No Job:						
All mo. looked or on layoff			4.6	4.1	6.9	6.0
Some looking/layoff			0.6	0.5	0.8	1.0
No looking and no layoff			36.2	36.2	32.7	33.0
Chi-square columns 2 and 3:	29.83	7 d.f.*				
HOURS WORKED/WEEK:						
Not applicable			37.1	36.6	35.4	35.3
1 to 19			5.7	5.9	5.0	4.9
20 to 34			8.9	8.7	10.0	11.4
35 to 40			33.3	33.6	34.2	34.5
41 or more			15.0	15.2	15.3	13.9
Chi-square columns 2 and 3:	3.92	4 d.f.				
HOUSHOLD MONTHLY INCOME:						
Less than 300			4.3	3.9	5.4	5.7
300 to 599			7.7	7.5	7.4	6.9
600 to 899			8.2	8.1	7.6	8.5
900 to 1199			7.8	7.7	8.6	7.2
1200 to 1599			11.6	11.3	13.1	13.1
1600 to 1999			10.1	10.1	9.5	11.1
2000 to 2999			21.7	22.4	21.0	17.0
3000 to 3999			13.4	14.0	11.5	12.3
4000 or more			15.1	15.0	15.7	18.1
Chi-square columns 2 and 3:	15.87	8 d.f.*				
PERSON MONTHLY INCOME:						
Less than 300			30.3	29.9	32.7	29.9
300 to 599			16.0	15.8	14.7	16.5
600 to 899			12.5	12.3	13.0	12.7
900 to 1199			9.8	9.8	10.5	9.6
1200 to 1599			10.3	10.4	10.2	10.1
1600 to 1999			6.7	7.0	5.3	7.1
2000 to 2999			8.7	9.0	8.1	6.9
3000 to 3999			3.1	3.2	3.0	3.6
4000 or more			2.7	2.7	2.7	3.6
Chi-square columns 2 and 3:	10.36	8 d.f.				
ASSET SUMMARY:						
Savings account:						
Yes			56.5	58.1	50.2	51.8
No			43.5	41.9	49.8	48.2
Chi-square columns 2 and 3:	25.74	1 d.f.*				
All other assets:						
Yes			41.1	42.4	36.9	34.7
No			58.9	57.6	63.1	65.3
Chi-square columns 2 and 3:	12.69	1 d.f.*				
HOUSHOLD RECIEVES CASH BENEFIT						
Yes			8.2	8.1	7.7	9.3
No			91.8	91.9	63.1	90.7
Chi-square columns 2 and 3	0.21	1 d.f.				
HOUSHOLD RECIEVES NONCASH BENEFIT						
Food Stamps			7.2	7.1	6.4	9.7
Other only			9.8	9.6	9.8	9.3
No benefits			83.0	83.2	83.9	80.9
Chi-square columns 2 and 3	1.06	2 d.f.				

Table 5: Distributions of Characteristics of Initially Interviewed Persons by Selected Reasons for Noninterview: SIPP 1984 Panel

(Chi-squares separately calculated for stayers (Table 4 column 2) against HH refusal (column 2); against Type D (column 3) and against Out of Universe (column 4))

	Restricted Sample	HH Refusal	Type D (moved address unknown	Out of Universe (died, institu., out of country, armed forces barracks)
Total Number	25138	2166	564	567
WAVE 1 VARIABLES				
REGIONAL OFFICE:				
Boston	7.2	7.5	4.3	6.9
New York	6.9	8.9	15.4	6.0
Philadelphia	10.4	7.7	6.9	7.6
Detroit	8.4	9.1	2.7	7.2
Chicago	7.8	4.2	4.6	10.4
Kansas City	8.4	7.6	2.3	7.8
Seattle	8.6	7.8	6.2	7.6
Charlotte	8.9	8.9	6.4	12.0
Atlanta	11.2	12.5	16.1	12.7
Dallas	9.7	12.0	16.5	8.5
Denver	5.7	4.9	8.0	4.8
Los Angeles	6.8	9.0	10.6	7.9
Chi-square with 11 degrees of freedom against column 2: 48.90*	**column 3: 78.01***	**column 4: 7.87**		
RESIDENTIAL CHARACTERISTICS:				
Not an SMSA	25.5	19.5	14.4	24.3
SMSA: LT 100,000	1.3	1.7	-	0.4
SMSA: 100-249 thou.	9.4	8.6	6.0	10.8
SMSA: 250-499 thou.	9.2	8.2	6.7	9.2
SMSA: 500-999 thou.	13.4	14.0	17.2	15.7
SMSA: 1-2.9 mill.	24.1	27.8	31.6	22.2
SMSA: 3-14.9 mill.	17.2	20.1	24.1	17.5
Chi-square with 6 d.f. against column 2: 27.90*	**column 3: 31.62***	**column 4: 3.50**		
LIVING QUARTERS:				
House, Apt., Flat	94.0	94.8	94.0	94.0
All other (collapsed from Table 4 into 1 category)	6.0	5.2	6.0	6.0
Chi-square with 9 d.f. against column 2: 6.30	**column 3: 33.23***	**column 4: 4.02**		
LIVING QUARTERS:				
Owned/being bought	69.7	72.5	26.8	59.4
Rented for cash	28.1	26.3	71.3	38.4
Occ'd w/o cash pmt	2.2	1.2	2.0	2.1
Chi-square with 2 d.f. against column 2: 4.62	**column 3: 190.66***	**column 4: 17.98***		
NUMBER OF PERSONS IN HOUSEHOLD:				
1 person	11.6	9.8	14.7	23.6
2 persons	29.0	30.6	27.1	36.0
3 persons	20.3	22.8	20.6	14.3
4 persons	20.0	18.1	15.4	11.3
5 persons	10.7	11.3	9.4	7.6
6 persons	4.4	4.1	6.9	3.0
7 persons	2.1	2.4	3.4	2.5
8 or more persons	2.0	0.8	2.5	2.9
Chi-square with 7 d.f. against column 2: 12.31	**column 3: 9.99**	**column 4: 36.95***		
INTERVIEW STATUS:				
Self	67.0	64.1	68.6	64.7
Proxy	33.0	35.9	31.4	35.3
Chi-square with 1 d.f. against column 2: 4.29*	**column 3: 0.03**	**column 4: 0.80**		
INTERVIEW LENGTH:				
Less than 15	27.4	29.0	27.3	30.5
15 to 29	43.8	43.1	44.9	37.9
30 to 44	20.9	20.7	20.6	19.2
45 to 59	6.0	5.5	5.7	8.3
60 or more	2.0	1.7	1.6	4.1
Chi-square with 4 d.f. against column 2: 2.14	**column 3: 0.27**	**column 4: 6.54**		
RELATIONSHIP:				
Reference Person	35.2	35.9	27.0	30.7
Primary Individual	13.0	11.3	20.0	25.7
Spouse	28.5	30.1	13.8	14.5
Child	16.8	17.6	17.9	14.5
Non-rel w/rels.	0.4	0.5	2.7	0.2
Non-rel no rels.	2.5	1.7	9.4	5.6
Chi-square with 6 d.f. against column 2: 2.56	**column 3: 118.58***	**column 4: 74.83***		
AGE:				
15-24	21.9	21.1	40.2	21.2
25-44	37.7	36.7	50.2	18.9
45-64	25.2	29.3	8.3	13.9
65 and over	15.1	12.8	1.2	46.0
Chi-square with 3 d.f. against column 2: 5.33	**column 3: 85.27***	**column 4: 14.32***		
SEX:				
Male	46.9	46.4	54.1	58.4
Female	53.1	53.6	45.9	41.6
Chi-square with 1 d.f. against column 2: 0.02	**column 3: 4.63***	**column 4: 11.65***		

	Restricted Sample	HH Refusal	Type D (moved address unknown)	Out of Universe
Total Number	25138	2166	564	567
RACE:				
White	86.8	87.7	75.0	81.0
Black	10.4	9.3	19.9	14.3
Am. Ind/Esk/AlNative	0.4	0.6	1.2	0.4
Asian/Pac. Isl.	2.4	2.4	3.9	-
Chi-square with 3 d.f. against column 2: 1.24 column 3: 27.78* column 4: 8.02*				
ETHNICITY:				
Spanish Origin	5.6	3.7	16.8	8.5
Not Spanish Origin	94.4	96.3	83.2	91.5
Chi-square with 1 d.f. against column 2: 3.10 column 3: 45.41* column 4: 6.69*				
MARITAL STATUS:				
Mar'd, spouse present	58.1	61.8	32.3	39.2
Mar'd spouse absent	0.6	0.6	1.1	1.9
Widowed	7.3	6.4	2.5	20.8
Divorced	6.6	5.4	13.1	6.9
Separated	2.3	1.8	8.2	3.2
Never Married	25.0	24.1	42.9	28.0
Chi-square with 5 d.f. against column 2: 2.82 column 3: 101.90* column 4: 65.83*				
HIGHEST GRADE ATTENDED:				
Less than 9 years	11.4	7.5	9.2	19.3
9-11 years	16.8	16.5	27.8	13.9
12 years	35.8	37.8	32.3	29.6
More than 12 years	36.0	38.2	30.7	27.2
Chi-square with 3 d.f. against column 2: 10.67* column 3: 16.92* column 4: 53.34*				
EMPLOYMENT RECORD:				
With Job:				
Worked all weeks	54.6	56.4	52.8	26.1
Missed 1+ weeks	1.2	1.4	1.4	0.7
Time on layoff	0.3	0.4	0.9	0.2
Job Part of Time:				
No layoff/not looking	1.3	0.9	0.7	0.9
Did look or on layoff	1.3	1.3	3.4	1.2
No Job:				
All mo. looked or on layoff	4.6	5.1	15.6	4.9
Some looking/layoff	0.6	0.4	2.1	0.9
No looking and no layoff	36.2	34.1	23.0	65.1
Chi-square with 7 d.f. against column 2: 5.07 column 3: 83.96* column 4: 70.62*				
HOURS WORKED/WEEK:				
Not applicable	37.1	35.1	33.5	68.1
1 to 19	5.7	5.4	3.2	3.9
20 to 34	8.9	10.4	10.9	3.9
35 to 40	33.3	34.7	35.1	15.7
41 or more	15.0	14.4	17.4	8.5
Chi-square with 4 d.f. against column 2: 3.41 column 3: 4.37 column 4: 77.49*				
HOUSHOLD MONTHLY INCOME:				
Less than 300	4.3	4.8	10.6	8.3
300 to 599	7.7	5.4	14.5	16.9
600 to 899	8.2	7.3	9.4	14.1
900 to 1199	7.8	7.3	12.6	9.5
1200 to 1599	11.6	13.1	13.3	10.6
1600 to 1999	10.1	9.3	9.9	10.6
2000 to 2999	21.7	22.3	18.3	12.7
3000 to 3999	13.4	13.8	3.5	8.5
4000 or more	15.1	16.8	7.8	8.8
Chi-square with 8 d.f. against column 2: 9.72 column 3: 60.90* column 4: 56.28*				
PERSON MONTHLY INCOME:				
Less than 300	30.3	30.6	40.4	31.9
300 to 599	16.0	13.3	18.8	29.6
600 to 899	12.5	13.4	9.8	15.0
900 to 1199	9.8	10.2	11.2	7.4
1200 to 1599	10.3	10.8	9.4	7.8
1600 to 1999	6.7	5.6	3.2	2.5
2000 to 2999	8.7	9.1	5.1	3.9
3000 to 3999	3.1	3.8	0.7	0.5
4000 or more	2.7	3.0	1.4	1.4
Chi-square with 8 d.f. against column 2: 6.65 column 3: 20.97* column 4: 43.02*				
ASSET SUMMARY:				
Savings account:				
Yes	56.5	56.5	26.1	48.0
No	43.5	43.4	73.9	52.0
Chi-square with 1 d.f. against column 2: 0.61 column 3: 76.18* column 4: 7.93*				
All other assets:				
Yes	41.1	42.8	14.7	34.6
No	58.9	57.2	85.3	65.4
Chi-square with 1 d.f. against column 2: 0.03 column 3: 57.33* column 4: 4.81*				
HOUSHOLD RECIEVES CASH BENEFIT				
Yes	8.2	4.6	17.6	14.3
No	91.8	95.4	82.4	85.7
Chi-square with 1 d.f. against column 2: 10.87* column 3: 20.92* column 4: 9.49*				
HOUSEHOLD RECIEVES NONCASH BENEFIT				
Food Stamps	7.2	2.9	18.6	9.3
Other only	9.8	7.9	14.0	16.0
No benefits	83.0	89.2	67.4	74.6
Chi-square with 2 d.f. against column 2: 20.44* column 3: 41.48* column 4: 11.32*				

	Leavers: Waves Interviewed				Returners:
Table 6: Interview Pattern by Reasons for First Noninterview	1	1,2	1,2,3	1,2,3,4	
Household Refusals: Number	645	488	437	488	322
Column Percent	6.1	50.4	48.3	44.8	31.0
Percent Universe	2.6	1.9	1.7	1.9	1.3
Person Refusals:　　Number	65	42	71	83	82
Column Percent	6.1	4.3	7.9	7.6	7.9
Percent Universe	0.3	0.2	0.3	0.3	0.3
Unable to contact:　　Number	26	39	30	89	205
Column Percent	2.5	4.0	3.3	8.2	19.7
Percent Universe	0.1	0.2	1.1	0.4	0.8
Type D:　　Number	111	126	148	152	137
(Moved address　Column Percent	10.5	13.0	16.4	13.9	13.2
unknown)　　Percent Universe	0.4	0.5	0.6	0.6	0.5
Out of Universe:　　Number	142	157	136	126	10
Column Percent	13.4	16.2	15.0	11.6	1.0
Percent Universe	0.6	0.6	0.5	0.5	0.0
Other:　　Number	69	116	82	152	282
Column Percent	6.5	12.0	9.1	13.9	27.2
Percent Universe	0.3	0.5	0.3	0.6	1.1
Column Total:	1058	968	904	1090	1038
Percent of Universe: (N= 25,138)	4.2	3.9	3.6	4.3	4.1

Table 7:	Percent of Persons with Changes in Characteristics by Interview of Event Occurrence and Interview Status				
Interview Pattern					
		Total	Change Between Waves		
			1 and 2	1 and 3	1 and 4
Household Size					
All Waves		19878	9.1	15.6	20.6
Only Waves 1,2,3,4		1090			26.1*
Only Waves 1,2,3		904		19.8*	
Only Waves 1,2		968	12.2		
Marital Status					
All Waves		19878	1.3	2.7	4.1
Only Waves 1,2,3,4		1090			5.7
Only Waves 1,2,3		904		4.6	
Only Waves 1,2		968	2.1		
Marital Status, Wave 1: Married Spouse Present					
All Waves		11913	0.8	1.6	2.4
Only Waves 1,2,3,4		570			4.9
Only Waves 1,2,3		487		2.7	
Only Waves 1,2		461	1.1		
Cash Benefits Status					
All Waves		19878	3.3	4.0	4.3
Only Waves 1,2,3,4		1090			3.3
Only Waves 1,2,3		904		5.9	
Only Waves 1,2		968	4.1		
Wave 1 Rec'd Cash Benef.					
All Waves		1610	18.3	23.2	27.5
Only Waves 1,2,3,4		96			22.9
Only Waves 1,2,3		95		28.4	
Only Waves 1,2		78	30.8		
NonCash Benefits Status					
All Waves		19878	6.3	8.8	9.1
Only Waves 1,2,3,4		1090			9.8
Only Waves 1,2,3		904		9.1	
Only Waves 1,2		968	9.1*		
Wave 1 Rec'd Food Stamp					
All Waves		1418	17.8	26.9	31.8
Only Waves 1,2,3,4		93			32.3
Only Waves 1,2,3		66		27.3	
Only Waves 1,2		59	37.3*		

Table 7:	Percent of Persons with Changes in Characteristics by Interview of Event Occurrence and Interview Status Cont.				
Interview Pattern					
	Total	**Change Between Waves**			
		1 and 2	1 and 3	1 and 4	
Employment Status					
All Waves	19878	10.2	14.1	15.1	
Only Waves 1,2,3,4	1090			17.2	
Only Waves 1,2,3	904		20.4*		
Only Waves 1,2	968	14.6*			
Wave 1 With Job					
All Waves	11271	7.3	9.1	10.5	
Only Waves 1,2,3,4	577			11.6	
Only Waves 1,2,3	440		16.1*		
Only Waves 1,2	501	12.8*			
Total Household Income					
All Waves	19878	21.4	24.3	26.6	
Only Waves 1,2,3,4	1090			34.4*	
Only Waves 1,2,3	904		31.5*		
Only Waves 1,2	968	31.1*			
Wave 1 High HHLD Income					
All Waves	5761	22.4	23.3	24.4	
Only Waves 1,2,3,4	267			28.8	
Only Waves 1,2,3	232		37.1*		
Only Waves 1,2	221	30.8			
Wave 1 Mid HHLD Income					
All Waves	8361	22.8	25.3	28.4	
Only Waves 1,2,3,4	457			39.8*	
Only Waves 1,2,3	368		26.6		
Only Waves 1,2	396	32.8*			
Wave 1 Low HHLD Income					
All Waves	5555	17.6	22.6	25.0	
Only Waves 1,2,3,4	344			29.1	
Only Waves 1,2,3	294		33.7*		
Only Waves 1,2	327	27.8*			

Table 8:	Percent of Persons Who Move in an Interview Wave by Interview Status in that Wave					
Interview Pattern	Total	Changed Residence during				
		Wave 2	Wave 3	Wave 4	Wave 5
All Waves	19,878	4.8	6.5	6.3	4.8
Only Waves 1,2,3,4	1,090				10.5*
Only Waves 1,2,3	904			11.0*	
Only Waves 1,2	968		7.5		
Only Wave 1	1,058	8.9*			